

AUTHOR INDEX TO VOLUME 142

- Abbate, S., see L. Ricard-Lespade 142 (1990) 245
- Albert, I.D.L., see S. Ramasesha 142 (1990) 395
- Allnatt, A.R., see A.K. Dham 142 (1990) 173
- Aquilanti, V., R. Candori, F. Pirani, T. Krümpelmann and Ch. Ottinger, On the interaction potentials for the electronic energy transfer reactions
 $\text{Xe}(^3\text{P}_{0,2}) + \text{N}_2(\text{X}) \rightarrow \text{Xe}(^1\text{S}_0) + \text{N}_2(\text{B}^3\Pi_g)$ 142 (1990) 47
- Aziz, R.A., see A.K. Dham 142 (1990) 173
- Azumi, T., see S. Takahashi 142 (1990) 69
- Bagryanskaya, E.G., see Yu.P. Tsentalovich 142 (1990) 75
- Batova, E.E., see P.P. Levin 142 (1990) 279
- Bäumler, W. and A. Penzkofer, Accumulation of DODCI P isomers by laser excitation 142 (1990) 431
- Bazhin, N.M., see S.V. Camyshin 142 (1990) 59
- Becker, A.C., see R. Böhling 142 (1990) 445
- Beidoun, A., see A.V. Deshpande 142 (1990) 123
- Besnard, M., see N. Del Campo 142 (1990) 91
- Blin, R., see J. Seliger 142 (1990) 237
- Böhling, R., A.C. Becker, B.F. Minaev, K. Seranski and U. Schurath, Excitation of $\text{O}_2(\text{a}^1\Delta_g, \text{b}^1\Sigma_g^+)$ and $\text{I}(^2\text{P}_{1/2})$ by energy transfer from $\text{I}_2(\text{A}, \text{A}'^3\Pi_{1,2u})$ in solid rare gases 142 (1990) 445
- Bourguignon, B., see J. Rostas 142 (1990) 97
- Bourguignon, B., see N. Shafizadeh 142 (1990) 111
- Brodovitch, J.-C., see D. Yu 142 (1990) 229
- Calvo Hernández, A., see S. Velasco 142 (1990) 361
- Camyshin, S.V., N.P. Gritsan, V.V. Korolev and N.M. Bazhin, Quenching of the luminescence of organic compounds by oxygen in glassy matrices 142 (1990) 59
- Candori, R., see V. Aquilanti 142 (1990) 47
- Corvaja, C., B. Kozankiewicz, L. Montanari and J. Prochorow, Time-resolved optical emission and EPR of the diphenylacetylene tetracyanobenzene crystal doped with *t*-stilbene 142 (1990) 83
- Cossart-Magos, C., see F. Morlet-Savary 142 (1990) 219
- Cox, S.F.J., see D. Yu 142 (1990) 229
- Davis, H.T., see S.-H. Suh 142 (1990) 203
- Del Campo, N., M. Besnard and J. Yarwood, Evidence for the breakdown of the point multipole approximation from far-infrared studies on liquid fluorinated benzenes 142 (1990) 91
- Delhalle, J., see M. Raynaud 142 (1990) 191
- Deshpande, A.V., A. Beidoun, A. Penzkofer and G. Wagenblast, Absorption and emission spectroscopic investigation of cyanovinyldiethylaniline dye vapors 142 (1990) 123
- Dezarnaud, C., M. Tronc and A.P. Hitchcock, Inner shell spectroscopy of the carbon-sulfur bond 142 (1990) 455

- Dham, A.K., W.J. Meath, A.R. Allnatt, R.A. Aziz and M.J. Slaman, XC and HFD-B potential energy curves for Xe-Xe and related physical properties 142 (1990) 173
- Dimicoli, I., see J.E. Parkin 142 (1990) 213
- Dimicoli, I., see F. Morlet-Savary 142 (1990) 219
- Dinse, K.P., see T. Prisner 142 (1990) 413
- Dmitrieva, I.K., S.K. Pogrebnya and P.I. Porshnev, V-T and V-V rate constants for energy transfer in diatomics. An accurate analytical approximation 142 (1990) 25
- Durig, J.R., see P. Groner 142 (1990) 381
- Effenhauser, C.S., P. Felder and J.R. Huber, Two-photon dissociation of sulfur dioxide at 248 and 308 nm 142 (1990) 311
- Ellinger, Y., see M. Raynaud 142 (1990) 191
- Farantos, S.C. and M. Founargiotakis, Wave packet dynamics and phase space structure of HCN molecule 142 (1990) 345
- Felder, P., see C.S. Effenhauser 142 (1990) 311
- Founargiotakis, M., see S.C. Farantos 142 (1990) 345
- Girardeau, M.D., see H. Kupka 142 (1990) 403
- Gorodyskii, A.V., see A.I. Karasevskii 142 (1990) 1
- Grishin, Yu.A., see Yu.P. Tsentalovich 142 (1990) 75
- Gritsan, N.P., see S.V. Camyshin 142 (1990) 59
- Groner, P., C.L. Tolley and J.R. Durig, A microwave and ab initio structure determination of methyl chloroformate 142 (1990) 381
- Gustav, K. and M. Storch, Theoretical contribution to radiative and non-radiative singlet-state deactivations of biphenylene 142 (1990) 17
- Haberlandt, H. and G. Pacchioni, Pseudopotential MRD CI calculations of nickel-containing molecules. III. NiSiH₃ and NiAlH₃ as minimum models of metal-support systems 142 (1990) 369
- Hadjoudis, E., see J. Seliger 142 (1990) 237
- Harris, J.M., see X.R. Zhu 142 (1990) 301
- Hayes, M.A., see D.M.P. Holland 142 (1990) 291
- Hennico, G., see M. Raynaud 142 (1990) 191
- Hitchcock, A.P., see C. Dezarnaud 142 (1990) 455
- Holland, D.M.P., M.A. MacDonald and M.A. Hayes, A photoelectron study of the inner valence molecular orbitals of N₂O 142 (1990) 291
- Huber, J.R., see C.S. Effenhauser 142 (1990) 311
- Ikawa, S., see A. Sugitani 142 (1990) 423
- Ivanov, C.I., see H. Kupka 142 (1990) 403
- Karasevskii, A.I., D.V. Matjushov and A.V. Gorodyskii, Electron transfer in media with local fluctuations 142 (1990) 1
- Kiefl, R.F., see D. Yu 142 (1990) 229
- Konaka, S., see A. Sugitani 142 (1990) 423
- Korolev, V.V., see S.V. Camyshin 142 (1990) 59
- Kozankiewicz, B., see C. Corvaja 142 (1990) 83

- Krümpelmann, T., see V. Aquilanti 142 (1990) 47
- Kupka, H., M.D. Girardeau, C.I. Ivanov and O.E. Polansky, Nonlinear normal-mode-scattering-mode transformation 142 (1990) 403
- Le Calvé, J., see F. Morlet-Savary 142 (1990) 219
- Le Floch, A., J. Rostas and F. Rostas, Lifetimes of the A $^1\Pi$ and low-lying triplet states of CO 142 (1990) 261
- Lenzi, M., E. Molinari, G. Piciacchia, V. Sessa and M.L. Terranova, A kinetic study of infrared multiple photon absorption in SF₆ during a TEA CO₂ laser pulse 142 (1990) 463
- Lenzi, M., E. Molinari, G. Piciacchia, V. Sessa and M.L. Terranova, A kinetic study of infrared multiple photon absorption in SF₆-noble gas mixtures during a TEA CO₂ laser pulse. Evaluation of V-T relaxation rates 142 (1990) 473
- Leung, S.-K., see D. Yu 142 (1990) 229
- Levin, P.P., E.E. Batova and V.Ya. Shafirovich, Magnetic field effect on the recombination of the triplet radical ion pair state of the semirigid Zn-porphyrin-viologen dyad 142 (1990) 279
- Lin, Z., T. Slee and D.M.P. Mingos, A structural jellium model of cluster electronic structure 142 (1990) 321
- Loesch, H.J., see M. Velegakis 142 (1990) 133
- Longhi, G., see L. Ricard-Lespede 142 (1990) 245
- MacDonald, M.A., see D.M.P. Holland 142 (1990) 291
- Macdonald, R.G. and F.C. Sopchysyn, Laser photolysis at 694.3 nm of highly excited vibrational levels of Ar₂($^3\Sigma_u^+$). I. Kinetics of Ar₂($^3\Sigma_u^+$) 142 (1990) 139
- Macdonald, R.G. and F.C. Sopchysyn, Laser photolysis at 694.3 nm of highly excited vibrational levels of Ar₂($^3\Sigma_u^+$). II. The kinetics of Ar(3p⁵4s) atomic states 142 (1990) 153
- Matjushov, D.V., see A.I. Karasevskii 142 (1990) 1
- Meath, W.J., see A.K. Dham 142 (1990) 173
- Mier-y-Teran, L., see S.-H. Suh 142 (1990) 203
- Milia, F., see J. Seliger 142 (1990) 237
- Minaev, B.F., see R. Böhling 142 (1990) 445
- Mingos, D.M.P., see Z. Lin 142 (1990) 321
- Molinari, E., see M. Lenzi 142 (1990) 463
- Molinari, E., see M. Lenzi 142 (1990) 473
- Mons, M., see F. Morlet-Savary 142 (1990) 219
- Montanari, L., see C. Corvaja 142 (1990) 83
- Morlet-Savary, F., see J.E. Parkin 142 (1990) 213
- Morlet-Savary, F., C. Cossart-Magos, I. Dimicoli, J. Le Calvé, M. Mons and F. Piuze, Rotational band contour analysis in the $\tilde{B} \leftarrow \tilde{X}$ system of chlorobenzene cation prepared by resonance enhanced multiphoton ionization 142 (1990) 219
- Najbar, J. and A.M. Turek, Populations of the excited states and the radical transients produced in the electron transfer reactions in liquid solutions 142 (1990) 35
- Obynochny, A.A., see Yu.P. Tsentalovich 142 (1990) 75
- Orczyk, M.E., Determination of a complete dielectric tensor of polymerizable *p*TS diacetylene 142 (1990) 485
- Ottinger, Ch., see V. Aquilanti 142 (1990) 47

- Pacchioni, G., see H. Haberlandt 142 (1990) 369
- Parkin, J.E., F. Morlet-Savary and I. Dimicoli, Rotational band contours from non-equilibrium energy distributions: application to chlorobenzene and chlorobenzene cation 142 (1990) 213
- Pei, X., see L. Wang 142 (1990) 335
- Penzkofer, A., see A.V. Deshpande 142 (1990) 123
- Penzkofer, A., see W. Bäumler 142 (1990) 431
- Percival, P.W., see D. Yu 142 (1990) 229
- Piciacchia, G., see M. Lenzi 142 (1990) 463
- Piciacchia, G., see M. Lenzi 142 (1990) 473
- Pirani, F., see V. Aquilanti 142 (1990) 47
- Piuzzi, F., see F. Morlet-Savary 142 (1990) 219
- Pogrebnya, S.K., see I.K. Dmitrieva 142 (1990) 25
- Polansky, O.E., see H. Kupka 142 (1990) 403
- Porshnev, P.I., see I.K. Dmitrieva 142 (1990) 25
- Prisant, M.G., see J. Rostas 142 (1990) 97
- Prisant, M.G., see N. Shafizadeh 142 (1990) 111
- Prisner, T. and K.P. Dinse, Determination of the deuteron quadrupole coupling tensor in the photo-excited triplet state of dibromobenzophenone by electron spin echo envelope modulation 142 (1990) 413
- Prochorow, J., see C. Corvaja 142 (1990) 83
- Pyżuk, W., Breakdown of the Landau theory in isotropic nematogens as observed by the nonlinear dielectric effect method 142 (1990) 495
- Ramasesha, S. and I.D.L. Albert, Sudden polarization in interacting model π systems: an exact study 142 (1990) 395
- Raynaud, M., C. Reynaud, Y. Ellinger, G. Hennico and J. Delhalle, High electric field effects on the acrylonitrile molecule: an ab initio study 142 (1990) 191
- Reynaud, C., see M. Raynaud 142 (1990) 191
- Ricard-Lespade, L., G. Longhi and S. Abbate, The first overtone of CH stretchings in polymethylene chains: a conformationally dependent spectrum 142 (1990) 245
- Rostas, F., see A. Le Floch 142 (1990) 261
- Rostas, J., N. Shafizadeh, G. Taieb, B. Bourguignon and M.G. Prisant, The $A^2\Pi-X^2\Sigma^+$ system of MgCl. Evidence for predissociation in the $A^2\Pi$ state of MgCl 142 (1990) 97
- Rostas, J., see N. Shafizadeh 142 (1990) 111
- Rostas, J., see A. Le Floch 142 (1990) 261
- Roth, H.-K., see Yu.P. Tsentalovich 142 (1990) 75
- Sagdeev, R.Z., see Yu.P. Tsentalovich 142 (1990) 75
- Schurath, U., see R. Böhling 142 (1990) 445
- Seliger, J., V. Zagar, R. Blinc, E. Hadjoudis and F. Milia, 1H - ^{14}N and 1H - ^{17}O nuclear quadrupole resonance in thermochromic N-5-chlorosalicylideneaniline 142 (1990) 237
- Seranski, K., see R. Böhling 142 (1990) 445
- Sessa, V., see M. Lenzi 142 (1990) 463
- Sessa, V., see M. Lenzi 142 (1990) 473
- Shafirovich, V.Ya., see P.P. Levin 142 (1990) 279
- Shafizadeh, N., see J. Rostas 142 (1990) 97

- Shafizadeh, N., J. Rostas, G. Taieb, B. Bourguignon and M.G. Prisant, Population distribution of MgCl formed from Mg+R-Cl reactions. Determination of the dissociation energy of MgCl 142 (1990) 111
- Slaman, M.J., see A.K. Dham 142 (1990) 173
- Slee, T., see Z. Lin 142 (1990) 321
- Sopchyshyn, F.C., see R.G. Macdonald 142 (1990) 139
- Sopchyshyn, F.C., see R.G. Macdonald 142 (1990) 153
- Storch, M., see K. Gustav 142 (1990) 17
- Sugitani, A., S. Ikawa and S. Konaka, Effect of temperature on the infrared band shapes and reorientational and vibrational relaxation of liquid acetonitrile 142 (1990) 423
- Suh, S.-H., L. Mier-y-Teran, H.S. White and H.T. Davis, Molecular dynamics study of the primitive model of 1-3 electrolyte solutions 142 (1990) 203
- Sun, Z., see L. Wang 142 (1990) 335
- Taieb, G., see J. Rostas 142 (1990) 97
- Taieb, G., see N. Shafizadeh 142 (1990) 111
- Takahashi, S., M. Terazima and T. Azumi, Temperature dependence of the enhancement factor of CIDNP created by the photolysis of benzoyl peroxide 142 (1990) 69
- Terazima, M., see S. Takahashi 142 (1990) 69
- Terranova, M.L., see M. Lenzi 142 (1990) 463
- Terranova, M.L., see M. Lenzi 142 (1990) 473
- Tolley, C.L., see P. Groner 142 (1990) 381
- Tronc, M., see C. Dezarnaud 142 (1990) 455
- Tsentelovich, Yu.P., E.G. Bagryanskaya, Yu.A. Grishin, A.A. Obynochny, R.Z. Sagdeev and H.-K. Roth, Medium influence on the mechanism of the photoreaction of anthraquinone with triethylamine 142 (1990) 75
- Turek, A.M., see J. Najbar 142 (1990) 35
- Velasco, S., J.A. White and A. Calvo Hernández, Memory effects on the rotational relaxation of diatomic polar molecules in non-polar liquids 142 (1990) 361
- Velegrakis, M. and H.J. Loesch, An improved potential for Xe+HCl from rainbow scattering 142 (1990) 133
- Venkateswaran, K., see D. Yu 142 (1990) 229
- Wagenblast, G., see A.V. Deshpande 142 (1990) 123
- Wang, L., Z. Sun, X. Pei and Y. Zhu, Liquid crystals of bowl-like molecules 142 (1990) 335
- White, H.S., see S.-H. Suh 142 (1990) 203
- White, J.A., see S. Velasco 142 (1990) 361
- Yarwood, J., see N. Del Campo 142 (1990) 91
- Yu, D., P.W. Percival, J.-C. Brodovitch, S.-K. Leung, R.F. Kiefl, K. Venkateswaran and S.F.J. Cox, Structure and intramolecular motion of muonium-substituted cyclohexadienyl radicals 142 (1990) 229
- Zagar, V., see J. Seliger 142 (1990) 237
- Zhu, X.R. and J.M. Harris, Studies of excited-state absorption and photoisomerization of cyanine dyes by using laser-induced anharmonic thermal gratings 142 (1990) 301
- Zhu, Y., see L. Wang 142 (1990) 335

LIST OF SUBJECTS

1 METHODS

1.1 Theoretical

- 1.1.1 Group theory and algebras
- 1.1.2 Classical mechanics *
- 1.1.3 Quantized field theory *
- 1.1.4 Many body and quasiparticle approaches
- 1.1.5 Coupling schemes and perturbative treatments *
- 1.1.6 Relativistic quantum mechanics
- 1.1.7 Transport quantum mechanics *
- 1.1.8 Equilibrium statistical mechanics
- 1.1.9 Statistical mechanics of stationary states
- 1.1.10 Non-equilibrium thermodynamic and hydrodynamic theories
- 1.1.11 Ab initio schemes for stationary properties *
- 1.1.12 Computational and simulation methods *
- 1.1.13 Molecular dynamics and scattering theory *

1.2 Experimental

- 1.2.1 Magnetic resonances *
- 1.2.2 Cyclotron resonance
- 1.2.3 Microwave spectroscopy *
- 1.2.4 Infrared spectroscopy *
- 1.2.5 Raman spectroscopy
- 1.2.6 Visible and UV spectroscopy *
- 1.2.7 Fluorescence spectroscopy *
- 1.2.8 Photoelectron and Auger spectroscopy *
- 1.2.9 X-ray spectroscopy *
- 1.2.10 Electron impact spectroscopy *
- 1.2.11 Laser methods *
- 1.2.12 Picosecond spectroscopy
- 1.2.13 Non-linear optical spectroscopy *
- 1.2.14 Synchrotron spectroscopies *
- 1.2.15 Coherent optical spectroscopy
- 1.2.16 Optical pumping
- 1.2.17 Multiple resonance spectroscopy *
- 1.2.18 Optoacoustic spectroscopy *
- 1.2.19 Atomic and molecular beam techniques *
- 1.2.20 Time-resolved experiments *
- 1.2.21 Mass spectrometry *
- 1.2.22 Radiolysis *
- 1.2.23 Mössbauer spectroscopy
- 1.2.24 X-ray, electron and neutron diffraction *
- 1.2.25 Neutron scattering
- 1.2.26 Light scattering
- 1.2.27 Field emission and field ionization
- 1.2.28 Measurement of macroscopic variables *

2 OBJECTS

2.1 Bulk systems

- 2.1.1 Gases *
- 2.1.2 Supersonic beams
- 2.1.3 Liquids neat *
- 2.1.4 Liquid mixtures and solutions *
- 2.1.5 Crystals *
- 2.1.5.1 neat *
- 2.1.5.2 mixed
- 2.1.6 Glasses *
- 2.1.7 Liquid crystals *
- 2.1.8 Polymers *
- 2.1.9 Semiconductors
- 2.1.10 Metals and alloys
- 2.1.11 Thin films
- 2.1.12 Surfaces
- 2.1.13 Low-dimensional materials
- 2.1.14 Dielectrics *
- 2.1.15 Plasmas
- 2.1.16 Biological systems

2.2 Microscopic systems

- 2.2.1 Atoms *
- 2.2.2 Molecules (neutral and ionic) *
- 2.2.2.1 diatomic *
- 2.2.2.2 small polyatomics *
- 2.2.2.3 aromatics *
- 2.2.2.4 other large *
- 2.2.2.5 polymeric and biological *
- 2.2.3 Molecular aggregates *
- 2.2.3.1 dimers
- 2.2.3.2 van der Waals molecules *
- 2.2.3.3 clusters *
- 2.2.3.4 complexes
- 2.2.4 Free radicals (including hydronium and muonium) *
- 2.2.5 Quasiparticles (including excitons)
- 2.2.6 Defects and impurities *
- 2.2.7 Ions and charge carriers *

* Denotes subjects covered in this volume

3 PHENOMENA

- 3.1 Molecular structure *
- 3.2 Vibrations and rotations of molecules *
- 3.3 Electronic structure and states *
- 3.4 Electric and magnetic properties *
- 3.5 Spin splittings
- 3.6 Optical activity
- 3.7 Molecular interactions *
- 3.8 Spectral bandshapes and intensities *
- 3.9 Coupling of electronic and nuclear motion *
- 3.10 Energy transfer processes *
- 3.11 Molecular photophysical processes *
- 3.12 Intramolecular dynamics *
 - 3.12.1 radiationless transitions *
 - 3.12.2 vibrational energy redistribution (including vibrational dissociation) *
- 3.13 Luminescence spectra, yields and lifetimes *
- 3.14 Coherence loss processes
- 3.15 Non-linear responses (including optical) *
- 3.16 Multiphoton phenomena *
- 3.17 Reactions (including dissociation) *
 - 3.17.1 gas phase *
 - 3.17.2 condensed phase
 - 3.17.3 photochemical *
- 3.18 Tunnelling
- 3.19 Electron transfer *
- 3.20 Positron annihilation
- 3.21 Ionization (including Rydberg states) *
- 3.22 Molecular motion (including diffusive) *
- 3.23 Isotopic effects *
- 3.24 Fluctuations and noise *
- 3.25 Collective motion and excitations *
- 3.26 Surface effects and catalysis
- 3.27 Thermodynamic and transport properties *
- 3.28 Structure of solids and liquids
- 3.29 Critical phenomena *
- 3.30 Phase transitions *

SUBJECT INDEX TO VOLUME 142

METHODS

Theoretical

Classical mechanics

- Wave packet dynamics and phase space structure of HCN molecule, S.C. Farantos and M. Founargiotakis 142 (1990) 345

Quantized field theory

- Electron transfer in media with local fluctuations, A.I. Karasevskii, D.V. Matjushov and A.V. Gorodyskii 142 (1990) 1

Coupling schemes and perturbative treatments

- Theoretical contribution to radiative and non-radiative singlet-state deactivations of bi-phenylene, K. Gustav and M. Storch 142 (1990) 17
- Memory effects on the rotational relaxation of diatomic polar molecules in non-polar liquids, S. Velasco, J.A. White and A. Calvo Hernández 142 (1990) 361

Transport quantum mechanics

- V-T and V-V rate constants for energy transfer in diatomics. An accurate analytical approximation, I.K. Dmitrieva, S.K. Pogrebnya and P.I. Porshnev 142 (1990) 25
- Memory effects on the rotational relaxation of diatomic polar molecules in non-polar liquids, S. Velasco, J.A. White and A. Calvo Hernández 142 (1990) 361

Ab initio schemes for stationary properties

- XC and HFD-B potential energy curves for Xe-Xe and related physical properties, A.K. Dham, W.J. Meath, A.R. Allnatt, R.A. Aziz and M.J. Slaman 142 (1990) 173
- High electric field effects on the acrylonitrile molecule: an ab initio study, M. Raynaud, C. Reynaud, Y. Ellinger, G. Hennico and J. Delhalle 142 (1990) 191
- Pseudopotential MRD CI calculations of nickel-containing molecules. III. NiSiH₃ and NiAlH₃ as minimum models of metal-support systems, H. Haberlandt and G. Pacchioni 142 (1990) 369

Computational and simulation methods

- Populations of the excited states and the radical transients produced in the electron transfer reactions in liquid solutions, J. Najbar and A.M. Turek 142 (1990) 35
- On the interaction potentials for the electronic energy transfer reactions $\text{Xe}(^3\text{P}_{0,2}) + \text{N}_2(\text{X}) \rightarrow \text{Xe}(^1\text{S}_0) + \text{N}_2(\text{B}^3\Pi_g)$, V. Aquilanti, R. Candori, F. Pirani, T. Krümpelmann and Ch. Ottinger 142 (1990) 47
- Quenching of the luminescence of organic compounds by oxygen in glassy matrices, S.V. Camyshin, N.P. Gritsan, V.V. Korolev and N.M. Bazhin 142 (1990) 59

- Rotational band contours from non-equilibrium energy distributions: application to chlorobenzene and chlorobenzene cation, J.E. Parkin, F. Morlet-Savary and I. Dimicoli 142 (1990) 213
- Wave packet dynamics and phase space structure of HCN molecule, S.C. Farantos and M. Founargiotakis 142 (1990) 345
- A microwave and ab initio structure determination of methyl chloroformate, P. Groner, C.L. Tolley and J.R. Durig 142 (1990) 381
- Sudden polarization in interacting model π systems: an exact study, S. Ramasesha and I.D.L. Albert 142 (1990) 395

Molecular dynamics and scattering theory

- V-T and V-V rate constants for energy transfer in diatomics. An accurate analytical approximation, I.K. Dmitrieva, S.K. Pogrebnya and P.I. Porshnev 142 (1990) 25
- Molecular dynamics study of the primitive model of 1-3 electrolyte solutions, S.-H. Suh, L. Mier-y-Teran, H.S. White and H.T. Davis 142 (1990) 203
- Wave packet dynamics and phase space structure of HCN molecule, S.C. Farantos and M. Founargiotakis 142 (1990) 345
- Nonlinear normal-mode-scattering-mode transformation, H. Kupka, M.D. Girardeau, C.I. Ivanov and O.E. Polansky 142 (1990) 403

Experimental

Magnetic resonances

- Temperature dependence of the enhancement factor of CIDNP created by the photolysis of benzoyl peroxide, S. Takahashi, M. Terazima and T. Azumi 142 (1990) 69
- Medium influence on the mechanism of the photoreaction of anthraquinone with triethylamine, Yu.P. Tsentalovich, E.G. Bagryanskaya, Yu.A. Grishin, A.A. Obynochny, R.Z. Sagdeev and H.-K. Roth 142 (1990) 75
- Time-resolved optical emission and EPR of the diphenylacetylene tetracyanobenzene crystal doped with *t*-stilbene, C. Corvaja, B. Kozankiewicz, L. Montanari and J. Prochorow 142 (1990) 83
- Structure and intramolecular motion of muonium-substituted cyclohexadienyl radicals, D. Yu, P.W. Percival, J.-C. Brodovitch, S.-K. Leung, R.F. Kiefl, K. Venkateswaran and S.F.J. Cox 142 (1990) 229
- ^1H - ^{14}N and ^1H - ^{17}O nuclear quadrupole resonance in thermochromic N-5-chlorosalicylideneaniline, J. Seliger, V. Zagar, R. Blinc, E. Hadjoudis and F. Milia 142 (1990) 237
- Determination of the deuteron quadrupole coupling tensor in the photo-excited triplet state of dibromobenzophenone by electron spin echo envelope modulation, T. Prisner and K.P. Dinse 142 (1990) 413

Microwave spectroscopy

- A microwave and ab initio structure determination of methyl chloroformate, P. Groner, C.L. Tolley and J.R. Durig 142 (1990) 381
- Determination of the deuteron quadrupole coupling tensor in the photo-excited triplet state of dibromobenzophenone by electron spin echo envelope modulation, T. Prisner and K.P. Dinse 142 (1990) 413

Infrared spectroscopy

- Evidence for the breakdown of the point multipole approximation from far-infrared studies on liquid fluorinated benzenes, N. Del Campo, M. Besnard and J. Yarwood 142 (1990) 91

- The first overtone of CH stretchings in polymethylene chains: a conformationally dependent spectrum, L. Ricard-Lespade, G. Longhi and S. Abbate 142 (1990) 245
- Effect of temperature on the infrared band shapes and reorientational and vibrational relaxation of liquid acetonitrile, A. Sugitani, S. Ikawa and S. Konaka 142 (1990) 423
- Visible and UV spectroscopy*
- On the interaction potentials for the electronic energy transfer reactions $\text{Xe}(^3\text{P}_{0,2}) + \text{N}_2(\text{X}) \rightarrow \text{Xe}(^1\text{S}_0) + \text{N}_2(\text{B}^3\Pi_g)$, V. Aquilanti, R. Candori, F. Pirani, T. Krümpelmann and Ch. Ottinger 142 (1990) 47
- The $\text{A}^2\Pi - \text{X}^2\Sigma^+$ system of MgCl. Evidence for predissociation in the $\text{A}^2\Pi$ state of MgCl, J. Rostas, N. Shafizadeh, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 97
- Population distribution of MgCl formed from $\text{Mg} + \text{R}-\text{Cl}$ reactions. Determination of the dissociation energy of MgCl, N. Shafizadeh, J. Rostas, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 111
- Absorption and emission spectroscopic investigation of cyanovinyldiethylaniline dye vapors, A.V. Deshpande, A. Beidoun, A. Penzkofer and G. Wagenblast 142 (1990) 123
- Rotational band contours from non-equilibrium energy distributions: application to chlorobenzene and chlorobenzene cation, J.E. Parkin, F. Morlet-Savary and I. Dimicoli 142 (1990) 213
- Rotational band contour analysis in the $\tilde{\text{B}} - \tilde{\text{X}}$ system of chlorobenzene cation prepared by resonance enhanced multiphoton ionization, F. Morlet-Savary, C. Cossart-Magos, I. Dimicoli, J. Le Calvé, M. Mons and F. Piuze 142 (1990) 219
- Lifetimes of the $\text{A}^1\Pi$ and low-lying triplet states of CO, A. Le Floch, J. Rostas and F. Rostas 142 (1990) 261
- Magnetic field effect on the recombination of the triplet radical ion pair state of the semirigid Zn-porphyrin-viologen dyad, P.P. Levin, E.E. Batova and V.Ya. Shafirovich 142 (1990) 279
- Accumulation of DODCI P isomers by laser excitation, W. Bäumlér and A. Penzkofer 142 (1990) 431
- Fluorescence spectroscopy*
- Theoretical contribution to radiative and non-radiative singlet-state deactivations of biphenylene, K. Gustav and M. Storch 142 (1990) 17
- Time-resolved optical emission and EPR of the diphenylacetylene tetracyanobenzene crystal doped with *t*-stilbene, C. Corvaja, B. Kozankiewicz, L. Montanari and J. Prochorow 142 (1990) 83
- Absorption and emission spectroscopic investigation of cyanovinyldiethylaniline dye vapors, A.V. Deshpande, A. Beidoun, A. Penzkofer and G. Wagenblast 142 (1990) 123
- Magnetic field effect on the recombination of the triplet radical ion pair state of the semirigid Zn-porphyrin-viologen dyad, P.P. Levin, E.E. Batova and V.Ya. Shafirovich 142 (1990) 279
- Excitation of $\text{O}_2(\text{a}^1\Delta_g, \text{b}^1\Sigma_g^+)$ and $\text{I}(^2\text{P}_{1/2})$ by energy transfer from $\text{I}_2(\text{A}, \text{A}'^3\Pi_{1,2u})$ in solid rare gases, R. Böhling, A.C. Becker, B.F. Minaev, K. Seranski and U. Schurath 142 (1990) 445
- Photoelectron and Auger spectroscopy*
- A photoelectron study of the inner valence molecular orbitals of N_2O , D.M.P. Holland, M.A. MacDonald and M.A. Hayes 142 (1990) 291
- X-ray spectroscopy*
- Inner shell spectroscopy of the carbon-sulfur bond, C. Dezarnaud, M. Tronc and A.P. Hitchcock 142 (1990) 455

Electron impact spectroscopy

- Inner shell spectroscopy of the carbon-sulfur bond, C. Dezarnaud, M. Tronc and A.P. Hitchcock 142 (1990) 455

Laser methods

- Lifetimes of the A $^1\Pi$ and low-lying triplet states of CO, A. Le Floch, J. Rostas and F. Rostas 142 (1990) 261
- Magnetic field effect on the recombination of the triplet radical ion pair state of the semirigid Zn-porphyrin-viologen dyad, P.P. Levin, E.E. Batova and V.Ya. Shafirovich 142 (1990) 279
- A kinetic study of infrared multiple photon absorption in SF₆ during a TEA CO₂ laser pulse, M. Lenzi, E. Molinari, G. Piciacchia, V. Sessa and M.L. Terranova 142 (1990) 463
- A kinetic study of infrared multiple photon absorption in SF₆-noble gas mixtures during a TEA CO₂ laser pulse. Evaluation of V-T relaxation rates, M. Lenzi, E. Molinari, G. Piciacchia, V. Sessa and M.L. Terranova 142 (1990) 473

Non-linear optical spectroscopy

- Studies of excited-state absorption and photoisomerization of cyanine dyes by using laser-induced anharmonic thermal gratings, X.R. Zhu and J.M. Harris 142 (1990) 301

Synchrotron spectroscopies

- A photoelectron study of the inner valence molecular orbitals of N₂O, D.M.P. Holland, M.A. MacDonald and M.A. Hayes 142 (1990) 291
- Inner shell spectroscopy of the carbon-sulfur bond, C. Dezarnaud, M. Tronc and A.P. Hitchcock 142 (1990) 455

Multiple resonance spectroscopy

- Rotational band contour analysis in the $\tilde{B} \leftarrow \tilde{X}$ system of chlorobenzene cation prepared by resonance enhanced multiphoton ionization, F. Morlet-Savary, C. Cossart-Magos, I. Dimicoli, J. Le Calvé, M. Mons and F. Piuze 142 (1990) 219
- ^1H - ^{14}N and ^1H - ^{17}O nuclear quadrupole resonance in thermochromic N-5-chlorosalicylideneaniline, J. Seliger, V. Zagar, R. Blinc, E. Hadjoudis and F. Milia 142 (1990) 237

Optoacoustic spectroscopy

- Studies of excited-state absorption and photoisomerization of cyanine dyes by using laser-induced anharmonic thermal gratings, X.R. Zhu and J.M. Harris 142 (1990) 301

Atomic and molecular beam techniques

- An improved potential for Xe+HCl from rainbow scattering, M. Velegrakis and H.J. Loesch 142 (1990) 133
- Two-photon dissociation of sulfur dioxide at 248 and 308 nm, C.S. Effenhauser, P. Felder and J.R. Huber 142 (1990) 311

Time-resolved experiments

- Populations of the excited states and the radical transients produced in the electron transfer reactions in liquid solutions, J. Najbar and A.M. Turek 142 (1990) 35
- Quenching of the luminescence of organic compounds by oxygen in glassy matrices, S.V. Camyshin, N.P. Gritsan, V.V. Korolev and N.M. Bazhin 142 (1990) 59
- Time-resolved optical emission and EPR of the diphenylacetylene tetracyanobenzene crystal doped with *t*-stilbene, C. Corvaja, B. Kozankiewicz, L. Montanari and J. Prochorow 142 (1990) 83

- Lifetimes of the $A^1\Pi$ and low-lying triplet states of CO, A. Le Floch, J. Rostas and F. Rostas 142 (1990) 261
- Magnetic field effect on the recombination of the triplet radical ion pair state of the semirigid Zn-porphyrin-viologen dyad, P.P. Levin, E.E. Batova and V.Ya. Shafirovich 142 (1990) 279
- Accumulation of DODCI P isomers by laser excitation, W. Bäumlér and A. Penzkofer 142 (1990) 431
- A kinetic study of infrared multiple photon absorption in SF_6 during a TEA CO_2 laser pulse, M. Lenzi, E. Molinari, G. Picciacchia, V. Sessa and M.L. Terranova 142 (1990) 463
- A kinetic study of infrared multiple photon absorption in SF_6 -noble gas mixtures during a TEA CO_2 laser pulse. Evaluation of V-T relaxation rates, M. Lenzi, E. Molinari, G. Picciacchia, V. Sessa and M.L. Terranova 142 (1990) 473

Mass spectrometry

- Rotational band contour analysis in the $\tilde{B} \leftarrow \tilde{X}$ system of chlorobenzene cation prepared by resonance enhanced multiphoton ionization, F. Morlet-Savary, C. Cossart-Magos, I. Dimicoli, J. Le Calvé, M. Mons and F. Piuze 142 (1990) 219

Radiolysis

- Laser photolysis at 694.3 nm of highly excited vibrational levels of $Ar_2(^3\Sigma_u^+)$. I. Kinetics of $Ar_2(^3\Sigma_u^+)$, R.G. Macdonald and F.C. Sopchysyn 142 (1990) 139
- Laser photolysis at 694.3 nm of highly excited vibrational levels of $Ar_2(^3\Sigma_u^+)$. II. The kinetics of $Ar(3p^54s)$ atomic states, R.G. Macdonald and F.C. Sopchysyn 142 (1990) 153

X-ray, electron and neutron diffraction

- Liquid crystals of bowl-like molecules, L. Wang, Z. Sun, X. Pei and Y. Zhu 142 (1990) 335

Measurement of macroscopic variables

- Liquid crystals of bowl-like molecules, L. Wang, Z. Sun, X. Pei and Y. Zhu 142 (1990) 335
- Determination of a complete dielectric tensor of polymerizable *p*TS diacetylene, M.E. Orczyk 142 (1990) 485
- Breakdown of the Landau theory in isotropic nematicogens as observed by the nonlinear dielectric effect method, W. Pyżuk 142 (1990) 495

OBJECTS

Bulk systems

Gases

- V-T and V-V rate constants for energy transfer in diatomics. An accurate analytical approximation, I.K. Dmitrieva, S.K. Pogrebnya and P.I. Porshnev 142 (1990) 25
- The $A^2\Pi-X^2\Sigma^+$ system of MgCl. Evidence for predissociation in the $A^2\Pi$ state of MgCl, J. Rostas, N. Shafizadeh, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 97
- Population distribution of MgCl formed from $Mg+R-Cl$ reactions. Determination of the dissociation energy of MgCl, N. Shafizadeh, J. Rostas, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 111
- Laser photolysis at 694.3 nm of highly excited vibrational levels of $Ar_2(^3\Sigma_u^+)$. I. Kinetics of $Ar_2(^3\Sigma_u^+)$, R.G. Macdonald and F.C. Sopchysyn 142 (1990) 139
- Laser photolysis at 694.3 nm of highly excited vibrational levels of $Ar_2(^3\Sigma_u^+)$. II. The kinetics of $Ar(3p^54s)$ atomic states, R.G. Macdonald and F.C. Sopchysyn 142 (1990) 153

- XC and HFD-B potential energy curves for Xe-Xe and related physical properties, A.K. Dham, W.J. Meath, A.R. Allnatt, R.A. Aziz and M.J. Slaman 142 (1990) 173
- Rotational band contours from non-equilibrium energy distributions: application to chlorobenzene and chlorobenzene cation, J.E. Parkin, F. Morlet-Savary and I. Dimicoli 142 (1990) 213
- Rotational band contour analysis in the $\tilde{B} \leftarrow \tilde{X}$ system of chlorobenzene cation prepared by resonance enhanced multiphoton ionization, F. Morlet-Savary, C. Cossart-Magos, I. Dimicoli, J. Le Calvé, M. Mons and F. Piuze 142 (1990) 219
- A microwave and ab initio structure determination of methyl chloroformate, P. Groner, C.L. Tolley and J.R. Durig 142 (1990) 381
- Liquids neat*
- Evidence for the breakdown of the point multipole approximation from far-infrared studies on liquid fluorinated benzenes, N. Del Campo, M. Besnard and J. Yarwood 142 (1990) 91
- The first overtone of CH stretchings in polymethylene chains: a conformationally dependent spectrum, L. Ricard-Lespade, G. Longhi and S. Abbate 142 (1990) 245
- Effect of temperature on the infrared band shapes and reorientational and vibrational relaxation of liquid acetonitrile, A. Sugitani, S. Ikawa and S. Konaka 142 (1990) 423
- Liquid mixtures and solutions*
- Populations of the excited states and the radical transients produced in the electron transfer reactions in liquid solutions, J. Najbar and A.M. Turek 142 (1990) 35
- Magnetic field effect on the recombination of the triplet radical ion pair state of the semirigid Zn-porphyrin-viologen dyad, P.P. Levin, E.E. Batova and V.Ya. Shafirovich 142 (1990) 279
- Memory effects on the rotational relaxation of diatomic polar molecules in non-polar liquids, S. Velasco, J.A. White and A. Calvo Hernández 142 (1990) 361
- Crystals*
- Time-resolved optical emission and EPR of the diphenylacetylene tetracyanobenzene crystal doped with *t*-stilbene, C. Corvaja, B. Kozankiewicz, L. Montanari and J. Prochorow 142 (1990) 83
- ^1H - ^{14}N and ^1H - ^{17}O nuclear quadrupole resonance in thermochromic N-5-chlorosalicylideneaniline, J. Seliger, V. Zagar, R. Blinc, E. Hadjoudis and F. Milia 142 (1990) 237
- Determination of a complete dielectric tensor of polymerizable *p*TS diacetylene, M.E. Orczyk 142 (1990) 485
- neat*
- The first overtone of CH stretchings in polymethylene chains: a conformationally dependent spectrum, L. Ricard-Lespade, G. Longhi and S. Abbate 142 (1990) 245
- Glasses*
- Quenching of the luminescence of organic compounds by oxygen in glassy matrices, S.V. Camyshin, N.P. Gritsan, V.V. Korolev and N.M. Bazhin 142 (1990) 59
- Liquid crystals*
- Liquid crystals of bowl-like molecules, L. Wang, Z. Sun, X. Pei and Y. Zhu 142 (1990) 335
- Breakdown of the Landau theory in isotropic nematogens as observed by the nonlinear dielectric effect method, W. Pyżuk 142 (1990) 495

Polymers

- Sudden polarization in interacting model π systems: an exact study, S. Ramasesha and I.D.L. Albert 142 (1990) 395
- Determination of a complete dielectric tensor of polymerizable *p*TS diacetylene, M.E. Orczyk 142 (1990) 485

Dielectrics

- ^1H - ^{14}N and ^1H - ^{17}O nuclear quadrupole resonance in thermochromic N-5-chlorosalicylic-deneaniline, J. Seliger, V. Zagar, R. Blinc, E. Hadjoudis and F. Milia 142 (1990) 237

Microscopic systems*Atoms*

- Excitation of $\text{O}_2(a^1\Delta_g, b^1\Sigma_g^+)$ and $\text{I}(^2\text{P}_{1/2})$ by energy transfer from $\text{I}_2(A, A'^3\Pi_{1,2u})$ in solid rare gases, R. Böhling, A.C. Becker, B.F. Minaev, K. Seranski and U. Schurath 142 (1990) 445

Molecules (neutral and ionic)

- Quenching of the luminescence of organic compounds by oxygen in glassy matrices, S.V. Camyshan, N.P. Gritsan, V.V. Korolev and N.M. Bazhin 142 (1990) 59
- XC and HFD-B potential energy curves for Xe-Xe and related physical properties, A.K. Dham, W.J. Meath, A.R. Allnatt, R.A. Aziz and M.J. Slaman 142 (1990) 173
- A microwave and ab initio structure determination of methyl chloroformate, P. Groner, C.L. Tolley and J.R. Durig 142 (1990) 381

-diatomic

- V-T and V-V rate constants for energy transfer in diatomics. An accurate analytical approximation, I.K. Dmitrieva, S.K. Pogrebnya and P.I. Porshnev 142 (1990) 25
- The $A^2\Pi-X^2\Sigma^+$ system of MgCl. Evidence for predissociation in the $A^2\Pi$ state of MgCl, J. Rostas, N. Shafizadeh, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 97
- Population distribution of MgCl formed from $\text{Mg}+\text{R}-\text{Cl}$ reactions. Determination of the dissociation energy of MgCl, N. Shafizadeh, J. Rostas, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 111
- Laser photolysis at 694.3 nm of highly excited vibrational levels of $\text{Ar}_2(^3\Sigma_u^+)$. I. Kinetics of $\text{Ar}_2(^3\Sigma_u^+)$, R.G. Macdonald and F.C. Sopchysyn 142 (1990) 139
- Laser photolysis at 694.3 nm of highly excited vibrational levels of $\text{Ar}_2(^3\Sigma_u^+)$. II. The kinetics of $\text{Ar}(3p^54s)$ atomic states, R.G. Macdonald and F.C. Sopchysyn 142 (1990) 153
- Lifetimes of the $A^1\Pi$ and low-lying triplet states of CO, A. Le Floch, J. Rostas and F. Rostas 142 (1990) 261
- Two-photon dissociation of sulfur dioxide at 248 and 308 nm, C.S. Effenhauser, P. Felder and J.R. Huber 142 (1990) 311
- Memory effects on the rotational relaxation of diatomic polar molecules in non-polar liquids, S. Velasco, J.A. White and A. Calvo Hernández 142 (1990) 361
- Excitation of $\text{O}_2(a^1\Delta_g, b^1\Sigma_g^+)$ and $\text{I}(^2\text{P}_{1/2})$ by energy transfer from $\text{I}_2(A, A'^3\Pi_{1,2u})$ in solid rare gases, R. Böhling, A.C. Becker, B.F. Minaev, K. Seranski and U. Schurath 142 (1990) 445

-small polyatomics

- Population distribution of MgCl formed from $\text{Mg}+\text{R}-\text{Cl}$ reactions. Determination of the dissociation energy of MgCl, N. Shafizadeh, J. Rostas, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 111

- High electric field effects on the acrylonitrile molecule: an ab initio study, M. Raynaud, C. Reynaud, Y. Ellinger, G. Hennico and J. Delhalle 142 (1990) 191
- The first overtone of CH stretchings in polymethylene chains: a conformationally dependent spectrum, L. Ricard-Lespade, G. Longhi and S. Abbate 142 (1990) 245
- A photoelectron study of the inner valence molecular orbitals of N_2O , D.M.P. Holland, M.A. MacDonald and M.A. Hayes 142 (1990) 291
- Two-photon dissociation of sulfur dioxide at 248 and 308 nm, C.S. Effenhauser, P. Felder and J.R. Huber 142 (1990) 311
- Wave packet dynamics and phase space structure of HCN molecule, S.C. Farantos and M. Founargiotakis 142 (1990) 345
- Pseudopotential MRD CI calculations of nickel-containing molecules. III. $NiSiH_3$ and $NiAlH_3$ as minimum models of metal-support systems, H. Haberlandt and G. Pacchioni 142 (1990) 369
- A microwave and ab initio structure determination of methyl chloroformate, P. Groner, C.L. Tolley and J.R. Durig 142 (1990) 381
- Nonlinear normal-mode-scattering-mode transformation, H. Kupka, M.D. Girardeau, C.I. Ivanov and O.E. Polansky 142 (1990) 403
- Inner shell spectroscopy of the carbon-sulfur bond, C. Dezarnaud, M. Tronc and A.P. Hitchcock 142 (1990) 455
- aromatics*
- Temperature dependence of the enhancement factor of CIDNP created by the photolysis of benzoyl peroxide, S. Takahashi, M. Terazima and T. Azumi 142 (1990) 69
- Evidence for the breakdown of the point multipole approximation from far-infrared studies on liquid fluorinated benzenes, N. Del Campo, M. Besnard and J. Yarwood 142 (1990) 91
- Absorption and emission spectroscopic investigation of cyanovinyl-diethylaniline dye vapors, A.V. Deshpande, A. Beidoun, A. Penzkofer and G. Wagenblast 142 (1990) 123
- Rotational band contours from non-equilibrium energy distributions: application to chlorobenzene and chlorobenzene cation, J.E. Parkin, F. Morlet-Savary and I. Dimicoli 142 (1990) 213
- Rotational band contour analysis in the $\tilde{B} \leftarrow \tilde{X}$ system of chlorobenzene cation prepared by resonance enhanced multiphoton ionization, F. Morlet-Savary, C. Cossart-Magos, I. Dimicoli, J. Le Calvé, M. Mons and F. Piuze 142 (1990) 219
- Determination of the deuteron quadrupole coupling tensor in the photo-excited triplet state of dibromobenzophenone by electron spin echo envelope modulation, T. Prisner and K.P. Dinse 142 (1990) 413
- Accumulation of DODCI P isomers by laser excitation, W. Bäumler and A. Penzkofer 142 (1990) 431
- other large*
- Studies of excited-state absorption and photoisomerization of cyanine dyes by using laser-induced anharmonic thermal gratings, X.R. Zhu and J.M. Harris 142 (1990) 301
- polymeric and biological*
- Sudden polarization in interacting model π systems: an exact study, S. Ramasesha and I.D.L. Albert 142 (1990) 395
- Molecular aggregates*
- Magnetic field effect on the recombination of the triplet radical ion pair state of the semirigid Zn-porphyrin-viologen dyad, P.P. Levin, E.E. Batova and V.Ya. Shafirovich 142 (1990) 279

- A structural jellium model of cluster electronic structure, Z. Lin, T. Slee and D.M.P. Mingos 142 (1990) 321
- van der Waals molecules*
- An improved potential for Xe+HCl from rainbow scattering, M. Velegrakis and H.J. Loesch 142 (1990) 133
- XC and HFD-B potential energy curves for Xe-Xe and related physical properties, A.K. Dham, W.J. Meath, A.R. Allnatt, R.A. Aziz and M.J. Slaman 142 (1990) 173
- clusters*
- A structural jellium model of cluster electronic structure, Z. Lin, T. Slee and D.M.P. Mingos 142 (1990) 321
- Pseudopotential MRD CI calculations of nickel-containing molecules. III. NiSiH₃ and NiAlH₃ as minimum models of metal-support systems, H. Haberlandt and G. Pacchioni 142 (1990) 369
- Free radicals (including hydronium and muonium)*
- Temperature dependence of the enhancement factor of CIDNP created by the photolysis of benzoyl peroxide, S. Takahashi, M. Terazima and T. Azumi 142 (1990) 69
- Medium influence on the mechanism of the photoreaction of anthraquinone with triethylamine, Yu.P. Tsentalovich, E.G. Bagryanskaya, Yu.A. Grishin, A.A. Obynochny, R.Z. Sagdeev and H.-K. Roth 142 (1990) 75
- The A²Π-X²Σ⁺ system of MgCl. Evidence for predissociation in the A²Π state of MgCl, J. Rostas, N. Shafizadeh, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 97
- Structure and intramolecular motion of muonium-substituted cyclohexadienyl radicals, D. Yu, P.W. Percival, J.-C. Brodovitch, S.-K. Leung, R.F. Kiefl, K. Venkateswaran and S.F.J. Cox 142 (1990) 229
- Defects and impurities*
- Electron transfer in media with local fluctuations, A.I. Karasevskii, D.V. Matjushov and A.V. Gorodyskii 142 (1990) 1
- Excitation of O₂(a¹Δ_g, b¹Σ_g⁺) and I(²P_{1/2}) by energy transfer from I₂(A, A' ³Π_{1,2u}) in solid rare gases, R. Böhling, A.C. Becker, B.F. Minaev, K. Seranski and U. Schurath 142 (1990) 445
- Ions and charge carriers*
- Molecular dynamics study of the primitive model of 1-3 electrolyte solutions, S.-H. Suh, L. Mier-y-Teran, H.S. White and H.T. Davis 142 (1990) 203
- PHENOMENA**
- Molecular structure*
- An improved potential for Xe+HCl from rainbow scattering, M. Velegrakis and H.J. Loesch 142 (1990) 133
- The first overtone of CH stretchings in polymethylene chains: a conformationally dependent spectrum, L. Ricard-Lespade, G. Longhi and S. Abbate 142 (1990) 245
- Lifetimes of the A¹Π and low-lying triplet states of CO, A. Le Floch, J. Rostas and F. Rostas 142 (1990) 261
- A structural jellium model of cluster electronic structure, Z. Lin, T. Slee and D.M.P. Mingos 142 (1990) 321
- Liquid crystals of bowl-like molecules, L. Wang, Z. Sun, X. Pei and Y. Zhu 142 (1990) 335
- A microwave and ab initio structure determination of methyl chloroformate, P. Groner, C.L. Tolley and J.R. Durig 142 (1990) 381

Vibrations and rotations of molecules

- V-T and V-V rate constants for energy transfer in diatomics. An accurate analytical approximation, I.K. Dmitrieva, S.K. Pogrebnya and P.I. Porshnev 142 (1990) 25
- Rotational band contours from non-equilibrium energy distributions: application to chlorobenzene and chlorobenzene cation, J.E. Parkin, F. Morlet-Savary and I. Dimicoli 142 (1990) 213
- Rotational band contour analysis in the $\tilde{B} \leftarrow \tilde{X}$ system of chlorobenzene cation prepared by resonance enhanced multiphoton ionization, F. Morlet-Savary, C. Cossart-Magos, I. Dimicoli, J. Le Calvé, M. Mons and F. Piuze 142 (1990) 219
- Structure and intramolecular motion of muonium-substituted cyclohexadienyl radicals, D. Yu, P.W. Percival, J.-C. Brodovitch, S.-K. Leung, R.F. Kiefl, K. Venkateswaran and S.F.J. Cox 142 (1990) 229
- Wave packet dynamics and phase space structure of HCN molecule, S.C. Farantos and M. Founargiotakis 142 (1990) 345
- A microwave and ab initio structure determination of methyl chloroformate, P. Groner, C.L. Tolley and J.R. Durig 142 (1990) 381

Electronic structure and states

- The $A^2\Pi-X^2\Sigma^+$ system of MgCl. Evidence for predissociation in the $A^2\Pi$ state of MgCl, J. Rostas, N. Shafizadeh, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 97
- High electric field effects on the acrylonitrile molecule: an ab initio study, M. Raynaud, C. Reynaud, Y. Ellinger, G. Hennico and J. Delhalle 142 (1990) 191
- $^1H-^{14}N$ and $^1H-^{17}O$ nuclear quadrupole resonance in thermochromic N-5-chlorosalicylideneaniline, J. Seliger, V. Zagar, R. Blinc, E. Hadjoudis and F. Milia 142 (1990) 237
- A photoelectron study of the inner valence molecular orbitals of N_2O , D.M.P. Holland, M.A. MacDonald and M.A. Hayes 142 (1990) 291
- Pseudopotential MRD CI calculations of nickel-containing molecules. III. $NiSiH_3$ and $NiAlH_3$ as minimum models of metal-support systems, H. Haberlandt and G. Pacchioni 142 (1990) 369
- Sudden polarization in interacting model π systems: an exact study, S. Ramasesha and I.D.L. Albert 142 (1990) 395
- Inner shell spectroscopy of the carbon-sulfur bond, C. Dezarnaud, M. Tronc and A.P. Hitchcock 142 (1990) 455

Electric and magnetic properties

- Temperature dependence of the enhancement factor of CIDNP created by the photolysis of benzoyl peroxide, S. Takahashi, M. Terazima and T. Azumi 142 (1990) 69

Molecular interactions

- On the interaction potentials for the electronic energy transfer reactions $Xe(^3P_{0,2}) + N_2(X) \rightarrow Xe(^1S_0) + N_2(B^3\Pi_g)$, V. Aquilanti, R. Candori, F. Pirani, T. Krümpelmann and Ch. Ottinger 142 (1990) 47
- An improved potential for $Xe + HCl$ from rainbow scattering, M. Velegrakis and H.J. Loesch 142 (1990) 133
- XC and HFD-B potential energy curves for Xe-Xe and related physical properties, A.K. Dham, W.J. Meath, A.R. Allnatt, R.A. Aziz and M.J. Slaman 142 (1990) 173
- A photoelectron study of the inner valence molecular orbitals of N_2O , D.M.P. Holland, M.A. MacDonald and M.A. Hayes 142 (1990) 291
- Determination of a complete dielectric tensor of polymerizable *p*TS diacetylene, M.E. Orczyk 142 (1990) 485

Spectral bandshapes and intensities

- Theoretical contribution to radiative and non-radiative singlet-state deactivations of bi-phenylene, K. Gustav and M. Storch 142 (1990) 17
- Evidence for the breakdown of the point multipole approximation from far-infrared studies on liquid fluorinated benzenes, N. Del Campo, M. Besnard and J. Yarwood 142 (1990) 91
- Effect of temperature on the infrared band shapes and reorientational and vibrational relaxation of liquid acetonitrile, A. Sugitani, S. Ikawa and S. Konaka 142 (1990) 423

Coupling of electronic and nuclear motion

- Theoretical contribution to radiative and non-radiative singlet-state deactivations of bi-phenylene, K. Gustav and M. Storch 142 (1990) 17
- Determination of the deuteron quadrupole coupling tensor in the photo-excited triplet state of dibromobenzophenone by electron spin echo envelope modulation, T. Prisner and K.P. Dinse 142 (1990) 413

Energy transfer processes

- V-T and V-V rate constants for energy transfer in diatomics. An accurate analytical approximation, I.K. Dmitrieva, S.K. Pogrebnya and P.I. Porshnev 142 (1990) 25
- On the interaction potentials for the electronic energy transfer reactions $\text{Xe}(^3\text{P}_{0,2}) + \text{N}_2(\text{X}) \rightarrow \text{Xe}(^1\text{S}_0) + \text{N}_2(\text{B}^3\Pi_g)$, V. Aquilanti, R. Candori, F. Pirani, T. Krümpelmann and Ch. Ottinger 142 (1990) 47
- Quenching of the luminescence of organic compounds by oxygen in glassy matrices, S.V. Camyshin, N.P. Gritsan, V.V. Korolev and N.M. Bazhin 142 (1990) 59
- Time-resolved optical emission and EPR of the diphenylacetylene tetracyanobenzene crystal doped with *t*-stilbene, C. Corvaja, B. Kozankiewicz, L. Montanari and J. Prochorow 142 (1990) 83
- Memory effects on the rotational relaxation of diatomic polar molecules in non-polar liquids, S. Velasco, J.A. White and A. Calvo Hernández 142 (1990) 361
- Excitation of $\text{O}_2(\text{a}^1\Delta_g, \text{b}^1\Sigma_g^+)$ and $\text{I}(^2\text{P}_{1/2})$ by energy transfer from $\text{I}_2(\text{A}, \text{A}'^3\Pi_{1,2u})$ in solid rare gases, R. Böhlting, A.C. Becker, B.F. Minaev, K. Seranski and U. Schurath 142 (1990) 445

Molecular photophysical processes

- Magnetic field effect on the recombination of the triplet radical ion pair state of the semirigid Zn-porphyrin-viologen dyad, P.P. Levin, E.E. Batova and V.Ya. Shafirovich 142 (1990) 279
- Studies of excited-state absorption and photoisomerization of cyanine dyes by using laser-induced anharmonic thermal gratings, X.R. Zhu and J.M. Harris 142 (1990) 301
- Determination of the deuteron quadrupole coupling tensor in the photo-excited triplet state of dibromobenzophenone by electron spin echo envelope modulation, T. Prisner and K.P. Dinse 142 (1990) 413

Intramolecular dynamics

- The $\text{A}^2\Pi\text{-X}^2\Sigma^+$ system of MgCl. Evidence for predissociation in the $\text{A}^2\Pi$ state of MgCl, J. Rostas, N. Shafizadeh, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 97
- Wave packet dynamics and phase space structure of HCN molecule, S.C. Farantos and M. Founargiotakis 142 (1990) 345
- Accumulation of DODCI P isomers by laser excitation, W. Bäumler and A. Penzkofer 142 (1990) 431

-radiationless transitions

- Electron transfer in media with local fluctuations, A.I. Karasevskii, D.V. Matjushov and A.V. Gorodyskii 142 (1990) 1

- Theoretical contribution to radiative and non-radiative singlet-state deactivations of bi-phenylene, K. Gustav and M. Storch 142 (1990) 17
- Population distribution of MgCl formed from Mg+R-Cl reactions. Determination of the dissociation energy of MgCl, N. Shafizadeh, J. Rostas, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 111
- Nonlinear normal-mode-scattering-mode transformation, H. Kupka, M.D. Girardeau, C.I. Ivanov and O.E. Polansky 142 (1990) 403
- vibrational energy redistribution (including vibrational dissociation)*
- Wave packet dynamics and phase space structure of HCN molecule, S.C. Farantos and M. Founargiotakis 142 (1990) 345
- Luminescence spectra, yields and lifetimes*
- Theoretical contribution to radiative and non-radiative singlet-state deactivations of bi-phenylene, K. Gustav and M. Storch 142 (1990) 17
- On the interaction potentials for the electronic energy transfer reactions $\text{Xe}(^3\text{P}_{0,2}) + \text{N}_2(\text{X}) \rightarrow \text{Xe}(^1\text{S}_0) + \text{N}_2(\text{B}^3\Pi_g)$, V. Aquilanti, R. Candori, F. Pirani, T. Krümpelmann and Ch. Ottinger 142 (1990) 47
- Quenching of the luminescence of organic compounds by oxygen in glassy matrices, S.V. Camyshin, N.P. Gritsan, V.V. Korolev and N.M. Bazhin 142 (1990) 59
- Absorption and emission spectroscopic investigation of cyanovinyldiethylaniline dye vapors, A.V. Deshpande, A. Beidoun, A. Penzkofer and G. Wagenblast 142 (1990) 123
- Lifetimes of the A $^1\Pi$ and low-lying triplet states of CO, A. Le Floch, J. Rostas and F. Rostas 142 (1990) 261
- Non-linear responses (including optical)*
- Studies of excited-state absorption and photoisomerization of cyanine dyes by using laser-induced anharmonic thermal gratings, X.R. Zhu and J.M. Harris 142 (1990) 301
- Breakdown of the Landau theory in isotropic nematogens as observed by the nonlinear dielectric effect method, W. Pyżuk 142 (1990) 495
- Multiphoton phenomena*
- Rotational band contours from non-equilibrium energy distributions: application to chlorobenzene and chlorobenzene cation, J.E. Parkin, F. Morlet-Savary and I. Dimicoli 142 (1990) 213
- Two-photon dissociation of sulfur dioxide at 248 and 308 nm, C.S. Effenhauser, P. Felder and J.R. Huber 142 (1990) 311
- A kinetic study of infrared multiple photon absorption in SF₆ during a TEA CO₂ laser pulse, M. Lenzi, E. Molinari, G. Piciacchia, V. Sessa and M.L. Terranova 142 (1990) 463
- A kinetic study of infrared multiple photon absorption in SF₆-noble gas mixtures during a TEA CO₂ laser pulse. Evaluation of V-T relaxation rates, M. Lenzi, E. Molinari, G. Piciacchia, V. Sessa and M.L. Terranova 142 (1990) 473
- Reactions (including dissociation)*
- Temperature dependence of the enhancement factor of CIDNP created by the photolysis of benzoyl peroxide, S. Takahashi, M. Terazima and T. Azumi 142 (1990) 69
- gas phase*
- Population distribution of MgCl formed from Mg+R-Cl reactions. Determination of the dissociation energy of MgCl, N. Shafizadeh, J. Rostas, G. Taieb, B. Bourguignon and M.G. Prisant 142 (1990) 111

- Laser photolysis at 694.3 nm of highly excited vibrational levels of $\text{Ar}_2(^3\Sigma_u^+)$. I. Kinetics of $\text{Ar}_2(^3\Sigma_u^+)$, R.G. Macdonald and F.C. Sopchyshyn 142 (1990) 139
- Laser photolysis at 694.3 nm of highly excited vibrational levels of $\text{Ar}_2(^3\Sigma_u^+)$. II. The kinetics of $\text{Ar}(3p^54s)$ atomic states, R.G. Macdonald and F.C. Sopchyshyn 142 (1990) 153
- photochemical*
- Medium influence on the mechanism of the photoreaction of anthraquinone with triethylamine, Yu.P. Tsentalovich, E.G. Bagryanskaya, Yu.A. Grishin, A.A. Obynochny, R.Z. Sagdeev and H.-K. Roth 142 (1990) 75
- Two-photon dissociation of sulfur dioxide at 248 and 308 nm, C.S. Effenhauser, P. Felder and J.R. Huber 142 (1990) 311
- Sudden polarization in interacting model π systems: an exact study, S. Ramasesha and I.D.L. Albert 142 (1990) 395
- Electron transfer*
- Electron transfer in media with local fluctuations, A.I. Karasevskii, D.V. Matjushov and A.V. Gorodyskii 142 (1990) 1
- Populations of the excited states and the radical transients produced in the electron transfer reactions in liquid solutions, J. Najbar and A.M. Turek 142 (1990) 35
- Magnetic field effect on the recombination of the triplet radical ion pair state of the semirigid Zn-porphyrin-viologen dyad, P.P. Levin, E.E. Batova and V.Ya. Shafirovich 142 (1990) 279
- Ionization (including Rydberg states)*
- Rotational band contours from non-equilibrium energy distributions: application to chlorobenzene and chlorobenzene cation, J.E. Parkin, F. Morlet-Savary and I. Dimicoli 142 (1990) 213
- Rotational band contour analysis in the $\tilde{B} \leftarrow \tilde{X}$ system of chlorobenzene cation prepared by resonance enhanced multiphoton ionization, F. Morlet-Savary, C. Cossart-Magos, I. Dimicoli, J. Le Calvé, M. Mons and F. Piuzzi 142 (1990) 219
- Molecular motion (including diffusive)*
- Effect of temperature on the infrared band shapes and reorientational and vibrational relaxation of liquid acetonitrile, A. Sugitani, S. Ikawa and S. Konaka 142 (1990) 423
- Isotopic effects*
- Structure and intramolecular motion of muonium-substituted cyclohexadienyl radicals, D. Yu, P.W. Percival, J.-C. Brodovitch, S.-K. Leung, R.F. Kiefl, K. Venkateswaran and S.F.J. Cox 142 (1990) 229
- Fluctuations and noise*
- Electron transfer in media with local fluctuations, A.I. Karasevskii, D.V. Matjushov and A.V. Gorodyskii 142 (1990) 1
- Collective motion and excitations*
- Evidence for the breakdown of the point multipole approximation from far-infrared studies on liquid fluorinated benzenes, N. Del Campo, M. Besnard and J. Yarwood 142 (1990) 91
- Thermodynamic and transport properties*
- Molecular dynamics study of the primitive model of 1-3 electrolyte solutions, S.-H. Suh, L. Mier-y-Teran, H.S. White and H.T. Davis 142 (1990) 203

Critical phenomena

- Breakdown of the Landau theory in isotropic nematogens as observed by the nonlinear dielectric effect method, W. Pyżuk 142 (1990) 495

Phase transitions

- Liquid crystals of bowl-like molecules, L. Wang, Z. Sun, X. Pei and Y. Zhu 142 (1990) 335
- Determination of a complete dielectric tensor of polymerizable *p*TS diacetylene, M.E. Orczyk 142 (1990) 485